

PATENT COOPERATION TREATY

From the
INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY

PCT

To:

KREMER, Simon, M.
Mewburn Ellis
York House
23 Kingsway
London WC2B 6HP
GRANDE BRETAGNE

RECEIVED

30 JAN 2004

NOTIFICATION OF TRANSMITTAL OF
THE INTERNATIONAL PRELIMINARY
EXAMINATION REPORT

(PCT Rule 71.1)

Date of mailing

(day/month/year)

28.01.2004

Applicant's or agent's file reference
SMKLP6138390

IMPORTANT NOTIFICATION

International application No.

PCT/EP 02/14512

International filing date (day/month/year)

18.12.2002

Priority date (day/month/year)

19.12.2001

Applicant

PLANT BIOSCIENCE LIMITED, et al.

1. The applicant is hereby notified that this International Preliminary Examining Authority transmits herewith the international preliminary examination report and its annexes, if any, established on the international application.
2. A copy of the report and its annexes, if any, is being transmitted to the International Bureau for communication to all the elected Offices.
3. Where required by any of the elected Offices, the International Bureau will prepare an English translation of the report (but not of any annexes) and will transmit such translation to those Offices.
4. **REMINDER**

The applicant must enter the national phase before each elected Office by performing certain acts (filing translations and paying national fees) within 30 months from the priority date (or later in some Offices) (Article 39(1)) (see also the reminder sent by the International Bureau with Form PCT/IB/301).

Where a translation of the international application must be furnished to an elected Office, that translation must contain a translation of any annexes to the international preliminary examination report. It is the applicant's responsibility to prepare and furnish such translation directly to each elected Office concerned.

For further details on the applicable time limits and requirements of the elected Offices, see Volume II of the PCT Applicant's Guide.

The applicant's attention is drawn to Article 33(5), which provides that the criteria of novelty, inventive step and industrial applicability described in Article 33(2) to (4) merely serve the purposes of international preliminary examination and that "any Contracting State may apply additional or different criteria for the purposes of deciding whether, in that State, the claimed inventions is patentable or not" (see also Article 27(5)). Such additional criteria may relate, for example, to exemptions from patentability, requirements for enabling disclosure, clarity and support for the claims.

Name and mailing address of the international
preliminary examining authority:



European Patent Office
D-80298 Munich
Tel. +49 89 2399 - 0 Tx: 523656 epmu d
Fax: +49 89 2399 - 4465

Authorized Officer

Faux, K

Tel. +49 89 2399-8062



PATENT COOPERATION TREATY

PCT



RECEIVED

03 FEB 2004

WIPO

PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT
(PCT Article 36 and Rule 70)

Applicant's or agent's file reference SMK/LP6138390		FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/PEA/416)	
International application No. PCT/EP 02/14512	International filing date (day/month/year) 18.12.2002	Priority date (day/month/year) 19.12.2001	
International Patent Classification (IPC) or both national classification and IPC C12N15/82			
Applicant PLANT BIOSCIENCE LIMITED, et al.			
<p>1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of 5 sheets, including this cover sheet.</p> <p><input type="checkbox"/> This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).</p> <p>These annexes consist of a total of sheets.</p>			
<p>3. This report contains indications relating to the following items:</p> <p>I <input checked="" type="checkbox"/> Basis of the opinion</p> <p>II <input type="checkbox"/> Priority</p> <p>III <input type="checkbox"/> Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</p> <p>IV <input type="checkbox"/> Lack of unity of invention</p> <p>V <input checked="" type="checkbox"/> Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</p> <p>VI <input type="checkbox"/> Certain documents cited</p> <p>VII <input type="checkbox"/> Certain defects in the international application</p> <p>VIII <input type="checkbox"/> Certain observations on the international application</p>			
Date of submission of the demand 04.07.2003		Date of completion of this report 28.01.2004	
Name and mailing address of the international preliminary examining authority:  European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465		Authorized Officer Grosskopf, R Telephone No. +49 89 2399-8714 	

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. **PCT/EP 02/14512**

I. Basis of the report

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17)*):

Description, Pages

1-19 as originally filed

Claims, Numbers

1-12 as originally filed

Drawings, Figures

1-2 as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).
3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:
- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- ☐ the description, pages:
- ☐ the claims, Nos.:
- ☐ the drawings, sheets:

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. **PCT/EP 02/14512**

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)).

(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)

6. Additional observations, if necessary:

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	1-12
	No: Claims	
Inventive step (IS)	Yes: Claims	12
	No: Claims	1-11
Industrial applicability (IA)	Yes: Claims	1-12
	No: Claims	

2. Citations and explanations

see separate sheet

Ad item V:

The present claims are directed to a method for increasing the content of a transgene-encoded biomolecule in an organism, characterised by changing the distribution of ATP and/or ADP in cells of the organism. The expression "changing the distribution of ATP and/or ADP" is merely the characterisation of the essential feature by the desired result to be achieved without indicating the means how said change should be carried out. In addition, said expression neither indicates the extent of the change nor the exact localisation where said change should take place ("in cells").

In view of this vague and broad definition of the main feature and when taking into account that nearly each reaction in the cell involves a "change of distribution of ATP" (e.g. the use of glucose in a culture medium), as indicated in the search report, a meaningful search for an accordingly characterised claim over the whole range was not possible.

As a consequence, also the examination has to be limited to the those means which were used in the present application in order to achieve the change of ATP/ADP distribution, i.e. the use of the cloned plastidial ATP/ADP transporter.

The quoted documents are:

(1) WO 99 58654 A (MAX PLANCK GESELLSCHAFT ; MOEHLMANN TORSTEN (DE); MARTINI NORBERT () 18 November 1999 (1999-11-18)

(2) GEIGENBERGER P ET AL: "OVEREXPRESSION OF PYROPHOSPHATASE LEADS TO INCREASED SUCROSE DEGRADATION AND STARCH SYNTHESIS, INCREASED ACTIVITIES OF ENZYMES FOR SUCROSE-STARCH INTERCONVERSIONS, AND INCREASED LEVELS OF NUCLEOTIDES IN GROWING POTATO TUBERS" PLANTA, SPRINGER VERLAG, DE, vol. 205, no. 3, July 1998 (1998-07), pages 428-437, XP000997825 ISSN: 0032-0935

The system which has been used in the present application to change the distribution of ATP has been described in D1.

Moreover, from several of the documents cited in the search report it is known that a change of ATP has an influence on various activities, including the increase of

enzyme activities and the increase of the content of various compounds (see D2). Thus, a skilled person would certainly not be surprised that a "change" in ATP concentration, in general, may also have an influence e.g. on the expression of a transgene which may result in a higher or lower content of said transgene.

On the other hand, it is admitted that it is not necessarily obvious that a directed change (increase or decrease) of the expression of the plastidial ATP/ADP transporter (i.e. the only embodiment which could be searched completely; see above) would result in an increase of the concentration of a specific transgene encoded biomolecule.